



UNIVERSITY OF VAVUNIYA
Procurement of Goods
Under
National Shopping Procedures

Invitation of Bids
For

**PROCUREMENT OF SUPPLYING, INSTALLATION, TESTING,
COMMISSIONING AND MAINTENANCE OF 135 KVA DIESEL
GENERATOR FOR LIBRARY**

Procurement No: UV/F/NCB/04/2024

From:
The Chairman,
Department Procurement Committee
University of Vavuniya,
Pambaimadu,
Vavuniya.

To:
.....
.....
.....



UNIVERSITY OF VAVUNIYA, SRI LANKA

PROCUREMENT NOTICE

PROCUREMENT OF DIESEL GENERATOR 135KVA

Sealed bids are hereby invited from the reputed dealers for the supply of following item by the Chairman, Department Procurement Committee, University of Vavuniya, Sri Lanka.

No.	Item No.	Item	Bid Security	Req.Qty.
01	UN/F/NCB/04/2024	Supply, Delivery, Installation, Commissioning and testing of 135KVA AMF Silent type Brand new Diesel Generator.	Rs.100,000.00	01 No.

Bidding documents including specifications of the above item can be obtained from the Asst. Bursar/Supplies, University of Vavuniya, Mannar Road, Pambaimadu up to 3.00 pm, 18th October 2024 by producing receipt for Rs.2,500/= as non-refundable fee. Payment could be made by Cash at the Shroff Counter of the University of Vavuniya up to 2.00pm on working days or could be credited with any branch of the Bank of Ceylon to University of Vavuniya Account No 2364602 of BOC, Vavuniya Branch in favour of Vice-Chancellor, University of Vavuniya and produce the receipt /deposit slip with written request for collection of bid documents.

Bids marked as **"Procurement Of Supplying, Installation, Testing, Commissioning And Maintenance Of 135 KVA Diesel Generator For Library ,Bid No. UV/F/NCB/04/2024 "** on the top left hand corner of the envelope addressed to The Chairman, Department Procurement Committee, University of Vavuniya, Mannar Road, Pambaimadu to be sent by registered post or to be deposited in the Tender Box kept at the office of the Assitant Bursar,(Supplies) University of Vavuniya, Mannar Road, Pambaimadu **before 2.00 pm on 23rd October 2024.**

Bids will be opened immediately after the closing of bids at the IT Board Room of the University of Vavuniya, Mannar Road , Pambaimadu.

Bidder or one authorized representative of the bidder will be permitted to be present at the opening of Bids.

**Chairman,
Department Procurement Committee,
University of Vavuniya.**

UNIVERSITY OF VAVUNIYA
PROCUREMENT OF DIESEL GENERATOR 135KVA

Form of Bid

The Chairman,
Department Procurement Committee,
University of Vavuniya,
Mannar Road, Pambaimadu.

01. I/ We

.....
(Name of Bidder)

.....
.....

(Address)

having been well acquainted with condition of bid, specifications, articles of agreement, condition of contract and B O Q for the above work to be carried out at the University of Vavuniya, do hereby submit this bid for a sum of Rs.....
..... (Rs.....)

02. I/We hereby undertake to have the whole of the work described on the drawings / specifications / B O Q / schedule of rates completed within a period of from the date of acceptance of bid, hereinafter referred to as the contract period.

03. The rates and the prices in the B O Q or/and schedule of rates have been duly filled in and signed by me/us so as to show the calculation upon which the bid is based and in accordance with which I/we agree to execute additional work and to have deduction made for omitted work.

04. I/We further undertake in the event of this bid being accepted, to execute when called upon by the University of Vavuniya to do so, an agreement for the due performance of the work and before the agreement is signed to execute a Performance Bond in a sum of money equivalent to 10% of the total value of the contract price in favour of the Vice-

Chancellor, University of Vavuniya as surety for the due and satisfactory completion of the whole of the said work as well as such additional work as may be ordered and for the Maintenance in complete repair of the whole of the work for the space of Twelve (12) months from the date of completion thereof and for the payment of all claims to which the University of Vavuniya may be entitled, made the provisions of this agreement.

05. I/We further agree that in the event of my/our failing to execute such an agreement and/or make such a deposit or execute such a Bond within ten (10) days of my/our being called upon to execute such agreement and/or make such deposit or execute such bond that any acceptance of this bid may be revoked by the University of Vavuniya and that I/we be held responsible for all damages sustained by the University of Vavuniya by reason of such failure.
06. I/We am/are fully aware that the Regional Procurement Committee is not bound to accept the lowest or any bid received.
07. I/We am/are fully aware that unless and until a formal agreement is prepared and executed, this bid together with your written acceptance thereof shall constitute a binding contract between us.
08. I/We further undertake that this bid shall not be withdrawn by me/us before the expiration of (90) days from the date fixed for the closing of bid but shall remain binding upon me/us and may be accepted at any time before such expiration.
09. We further stated that the following are the Partners/Directors of our partnership/Limited & Liability Company.
 - 1.
 - 2.
 - 3.
10. And we further state that the following are authorized to witness the common seal of our company.
 - 1.
 - 2.

11. BOQ (Schedule of Rates)

No.	Item No.	Item	Req.Qt y.	Unit Price	VA T for unit	Total Price including VAT
01	UV/F/NCB/04 /2024	Supply, Delivery, installation, Commissioning and testing of 135KVA AMF Silent type Brand new diesel Generator.	01 Nos			

Total price excluding taxesRs.....

Add V.A.Trs.....

Total carried to form of bid Rs.

In witness whereof, I/we do set my hand/our respective hands hereto at

.....

on this.....day of. _____ 2024.

Signature of Bidder

(on Common Seal)

in the capacity of.....and/or duly authorized to sign this bid for and on behalf of
M/S.....

Witness:

Signature	Name	Address
1.....

2.....

**CONDITIONS FOR THE PROCUREMENT OF-DIESEL
GENERATOR 135KVA**

BID No: UV/F/NCB/04/2024

**CONDITIONS TO BE SIGNED AND SUBMITTED ALONG WITH THE
BID DOCUMENTS BY THE BIDDER**

1.0 SCOPE OF WORK

The bid is for the supply of Generator 135KVA to the University of Vavuniya as given below.

	Item No.	Item	
01	UV/F/NCB/04 /2024	Supply, Delivery, Installation, Commissioning and testing of 135KVA AMF Silent type Brand new Diesel Generator.	01 Nos.

2.0 ELIGIBILITY OF BID

- 2.1 The prospective bidders should have minimum of 10 years' experience installing and maintenance of generator systems who have already undertaken and executed a similar contract for Universities and government organization, or reputed firms.
- 2.2 They should also possess the certificate of registration issued by the Registrar of Companies as registered limited liability Company in the relevant field.
- 2.3 The prospective bidders should be financially sound and should have all the resources at their disposal to successfully carry out the supply of Generator
- 2.4 Bidders should have a valid vender certification.
- 2.5 Having a service centre in Vavuniya will be considered as an added qualification.

3.0 ISSUE OF BID DOCUMENTS

Bid documents will be issued by the Assistant Bursar / Supplies, the University of Vavuniya, Mannar Road, Pambaimadu up to 3.00pm, 09th October to 18th October 2024 on receipt of Rs.2500.00 as non-refundable fee . Payments could be paid by Cash at the Shroff Counter of the University of Vavuniya up to 3.00pm on working days or could be credited with any branch of the Bank of Ceylon to University of Vavuniya Account No-2364602 at BOC, Vavuniya Branch in favour of Vice-Chancellor, the University of Vavuniya, and produce the receipt/ deposit slip with written request for collection of bid documents.

4.0 CLOSING OF BIDS

Bids will be closed at 2.00p.m. On 23rd October 2024.

5.0 OPENING OF BIDS

Bids will be opened immediately after the closer of bids. Bidder or one of his authorized representative could be permitted to be present when bids are open at 2.30pm On 23rd October 2024.

6.0 SUBMISSION OF BIDS

6.1 The Bidder shall furnish a Bid security in favour of the Vice-Chancellor, the University of Vavuniya to the value of (fifty thousands) The Bid security should be given only from a recognized Bank in Sri Lanka valid for a period of 120 days from the date of closing of the bid. The above Bid security should be enclosed with the original bid.

No	Item No	Item	Req.Qty	Bid Security
01	UV/F/NCB/04/2024	Supply, Delivery, Installation, Commissioning and testing of 135KVA AMF Silent type Brand: new Diesel Generator.	01 Nos	Rs.100,000.00

6.2 **Bids should be submitted in duplicate and in separate envelopes.** Both envelopes should be enclosed in one and securely sealed cover and the following words should be clearly written on the top left-hand corner of the envelopes in which the bids are enclosed as appropriate **"Procurement Of Supplying, Installation, Testing, Commissioning And Maintenance Of 135 KVA Diesel Generator For Library ,Bid No. UV/F/NCB/04/2024. "**

6.3 Bids should be addressed to the Chairman, Department Procurement Committee, the University of Vavuniya, Mannar Road, Pambaimadu and sent under registered cover or deposited in the tender box available at the Office of the Assistant Bursar, University of Vavuniya, Mannar Road, Pambaimadu

6.4 Any Bid received after the closing date and time, will be rejected.

6.5 Bid documents should be perfected neatly and legibly. Erasures are not permitted. Bidders should be responsible for any inaccuracy in the bid documents.

6.6 All bids should conform to the instructions, conditions and specifications pertaining to this bid as per details given in relevant documents.

6.7 Prices should be firm & valid for at least 90 days from the date of closing of the bid. No increase in price will be permitted after close of bid.

6.8 Bidders should attach a copy of the valid vender certificate with bid response.

6.9 The Chairman, Department Procurement Committee of the University of Vavuniya shall have the right to accept or reject any bid.

6.10 If any bidder is not registered for VAT he/she should indicate the net value of the bid. Under this category, bidders should obtain a letter from the Commissioner, Department of Inland Revenue certifying that the company has not been registered for VAT should be attached to the bid.

7.0 CONDITIONS OF THE CONTRACT

- 7.1 In the process of examination of bids the first step is to determine the eligibility of bidders. Criteria referred to in Section 2 of this document shall be considered. Depending on the requirements and complexity of the systems / products as well as their cost, factors such as past experience, financial stability, availability of qualified technical staff, equipment capabilities, performance / delivery record, arbitration/ litigation history etc. shall be considered by the University of Vavuniya.
- 7.2 The equipment should be covered by a comprehensive guarantee period. At the end of the guarantee period the suppliers should enter into an agreement with the University of Vavuniya for the proper maintenance of the equipment for a mutually agreed period. Therefore, bidders are required to submit the details regarding the maintenance plans covering a period of 05 years and the basis of charging for same along with the bid. Please note that this aspect will be considered very seriously in evaluating the bids.
- 7.3 The successful bidder shall be required to undertake the contract within 14 days of notification of the award of contract, by entering into an agreement with the University of Vavuniya.
- 7.4 A Performance Bond of 10% of the contract value should be submitted by the Contractor before entering into the agreement to ensure the due and proper execution of the contract. This deposit can be made by way of a bank guarantee valued for 90 days / or in cash payment at Shroff counter, the University of Vavuniya, Mannar Road , Pambaimadu.
- 7.5 Sub contract will not be permitted.
- 7.6 Period of contract shall be 45 calendar days commencing from the date of agreement. Liquidity, damages shall be recovered for each day by way of penalty late delivery equivalent to 0.5% of the contract price subject to a maximum of 10% of the total contract price.
- 7.7 Payment of contract value shall be made as follows.
1st Installment: 90% of the contract value shall be paid after inspection and the satisfactory commissioning of items in the Procurement Notice.
2nd and last Installment: The balance 10% of the contract value shall be paid after expiry of sixty days period reckoned from the date of completion of the contract provided the contractor has rectified any defects of the equipment.
Payment will be made by cheque drawn in favour of the Business name of the bidder with "Account Payee only" Crossing
- 7.8 If the contractor is confronted with any technical problem with regard to designs, material and specification etc. after under taking the contract, the matter should immediately be brought to the notice of the Vice-Chancellor, the University of Vavuniya for Appropriate Remedial Measures.
- 7.9 The contractor shall at all times guarantee the quality of items in every respect. Payment shall not be made for any item that does not conform to the quality expected, specifications, and other details specified in the tender documents.

7.10 If the University of Vavuniya accept the price quoted to delivery at the University of Vavuniya, all the items should be transported to the University of Vavuniya by the supplier at their cost and risk. The University of Vavuniya will not bear any cost in connection with transporting the items to the the University of Vavuniya.

7.11 Any further information or clarification may be obtained from the **Assistant Bursar on T.P No 024 222 0299** during normal office hours.

8.0 JONTRACT DOCUMENTS

The document on conditions of the bid as well as the document on general specification shall form part of contract documents.

Bidders are therefore requested to sign and submit these documents along with other bid documents.

.....

Signature of the Bidder

Name of Bidder

Address

Seal:

Date

Form of Bid Security

[This Guarantee form shall be filled in accordance with the instructions indicated in brackets]

Issuing Agency:

...*[insert issuing agency's name and address of Issuing branch or Office]*

**Beneficiary: “The Chairman, Department of Procurement Committee”
University of Vavuniya,
Pambaimadu, Vavuniya.**

Date:.....*[insert (by issuing agency) date]*

BID GURANTEE No:.....*[insert (by issuing agency) number]*

We have been informed that *[Insert (by issuing agency)name of the Bidder]* (Hereinafter called “the Bidder”) has submitted to you its bid dated..... *[Insert (by issuing agency) date]* (Hereinafter called “the Bid”) for the execution of*[Insert name of Contract]*

Furthermore, we understand that, according to the conditions, Bids must be supported by a Bid Guarantee.

At the request of the Bidder, we *[Insert name of issuing agency]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of *[Insert amount in words]*(..... ..) *[amount in figures]* upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

- a) Has withdrawn its Bid during the period of bid validity specified; or
- b) does not accept the correction of errors in accordance with the Instructions to Bidders(hereinafter “the ITB”); or
- c) having been notified of the acceptance of its Bid by the Employer during the period of bid validity, (i) fails or refuses to execute the Contract Form, if required, or (ii) fails or refuse to furnish the Performance Security, in accordance with the ITB.

This guarantee will remain in force up to *(Insert date as at Invitation for Bid)*

Consequently, any demand for payment under this Guarantee must be received by us at the office on or before that date.

.....
[Signature(s) of authorized representative(s)]

SPECIMEN FORM FOR PERFORMANCE SECURITY

Issuing Agency: -----
----- [Issuing Agency's Name and Address of Issuing Branch
or Office]

Beneficiary: -----
----- [Name and Address of Employer]

Date: -----

PERFORMANCE SECURITY NO: -----

We have been informed that [Name of Contractor]
(Hereinafter called "the Contractor") has entered into Contract No. [Reference
number of the contract] dated..... with you, for the.....
..... [Name of the Contract] (Hereinafter called "the
Contract");

Furthermore, we understand that, according to the conditions of the Contract, a performance
guarantee is required.

At the request of the Contractor, we [Name of Agency]
hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of
..... [Amount in words] (.....) [amount in
figures], upon receipt by us of your first demand in writing accompanied by a written statement
stating that the Contractor is in breach of its obligation(s) under the Contract, without your
needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the day of202.. [insert date,
320days beyond the intended date of Completion] and any demand for payment under it must be
received by us at this office on or before that date.

.....
[Signature(s)]

University of Vavuniya
BID No: UV/F/NCB/04/2024
Price Schedule

No	Description of Item	1	2	3	4	5	6
		Qty (Nos)	Unit Price	VAT	Price with VAT (2+3)	Total (1x4)	Remark
01	Supply, Delivery, Installation, Commissioning and testing of 135KVA AMF Silent type Brand: new Diesel Generator.	01 Nos					

VAT Registration Number if any

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rupees (Amount in Figures)

(Amount in words) within the period specified in the Invitation for Bids.

We also confirm that the warrantee/guarantee specified shall apply to the offered goods.

Company Name:

Signature:.....

Name of the authorized person:

Contact Number :

Date:

Address:

Company Seal:

.....

SPECIFICATION

**SUPPLYING, INSTALLATION, TESTING,
COMMISSIONING AND MAINTENANCE OF 135
KVA DIESEL GENERATOR FOR LIBRARY
BUILDING FOR UNIVERSTITY OF VAVUNIYA**

1. General

It is required to supply, install, test, commission and maintain 135 kVA brand new, canopy type, and latest proven designed, tropicalized, prime rated, automatic mains failure to provide backup electrical power for new university building.

The generator set shall be capable of delivering the rated output for continuous period of not less than 12 hours at a time. It shall have overload capacity of 110% of the rated output for one hour during a period of 12 continuous hour's operation. The generator must have base tanks for continuous operation of 12hrs individually.

Generator set shall have the following features:

- Factory-mounted on a common, rigid, welded, structural steel base.
- Automatic start, accelerate to the rated speed and deliver the specified kW/kVA output at 50 Hz within 10 seconds.
- Recover rapidly from instantaneous changes between no load and the specified kW/kVA rating, and the reverse changes of load, without damage.
- Engine-generator set shall be statically and dynamically balanced at the factory.

The generator is to be imported directly from manufacturer with all accessories and connected items of the generator except fuel tank and attenuators, as per the Specification in the bidding document.

Bidder shall carefully read all the technical requirement given in this document and technical schedules and duly filled technical document shall be submitted with the offer.

2. Scope of Work

The brand new, canopy type, latest proven designed, tropicalized, prime rated, Auto Start, Auto Synchronized with Auto load sharing & Auto load demand 135KVA diesel generators are to be supplied, installed, tested & commissioned at the premises as per the specifications.

Installation & commissioning of the generators shall include the followings.

- i. Placing 135 KVA diesel generators on the plinths (constructed by Civil contractor)/ & fix by foundation bolts with vibration isolation mounts supplied by generator manufacturer.
- ii. Supply & Installation of feeder cables and control cables to the ATS panel.
- iii. Supply and fixing of exhaust pipes suitably to divert exhaust gases above the Generator Room. Exact pipe heights should be calculated as per the CEA regulation and submit for engineer's approval prior to installation.
- iv. A master key operated switch shall be supplied and Installed in the generator control panel. Upon activation, of this switch by the maintenance staff, the generators shall start, synchronize and load automatically (AMF function shall activate).
- v. Suitable earth should be provided for the generators, control panels, etc. and it will be under generator contractor's scope.
- vi. The load testing and commissioning of the generators shall be carried out with presence of representatives of the Employer to see the performance and to check whether the generators supplied are in accordance with the specifications. The resistive load bank shall be supplied by the Contractor. The good quality Decibels Meter shall also be provided to check the sound level.
- vii. All protections, indicators etc. shall be checked and tested for their satisfactory functioning. The test report indicating all results shall be prepared and signed by both parties.

- viii. After satisfactory testing & commissioning of Generators, the surrounding area should be cleaned properly to the satisfaction of the Employer and the generators shall be handed over to the Employer with properly prepared handing over and taking over documents.

Other than above, following works shall be included in the scope of work.

- i. Design of suitable shelters for the generators.
- ii. Power cables laying underground and terminating to the ATS panel. Detail of underground cable laying shall be submitted for Engineer's approval.
- iii. Obtaining the necessary approval for the designs and shop drawings.
- iv. Arranging online Factory Acceptance Test (FAT) at the manufacturers' workshops before importing the Generator sets.
- v. Training of the Employer's staff about the operation of the system.
- vi. Maintenance of the system/Handing over the maintenance to the local agent of Generator Manufacturer (after the defect liability period if required by the Employer).

3. Site Environment Conditions

All equipment shall be tropicalized and suitable for prolonged operation in tropical site environmental conditions. Prime rating of the diesel generator shall be at the following site environmental conditions.

Maximum Ambient Temperature	-	40°C
Annual Average Ambient Temperature	-	35°C
Average relative humidity	-	90%
Altitude not exceeding	-	10m

System Parameters

Nominal Voltage	-	400/230 V A.C 3 ph. & neutral
System Frequency	-	50 Hz
Method of Earth	-	Neutral Solidly earthed at substations
System fault level	-	15kA
Type of Earthing	-	TT

4. Qualification Information

4.1. Engine Manufacturer

Shall be a renowned company specialized in manufacture of diesel engines with minimum 15 years documented experience. Manufacturing plant where the proposed engine would be built shall have minimum 10 years documented experience in the production of diesel engines. Quality assurance system of the manufacturer shall have valid ISO 9001 certificate.

4.2. Alternator Manufacturer

Shall be a renowned company specialized in manufacture of alternators with minimum 15 years documented experience. Manufacturing plant where the proposed alternator would be built shall have minimum 10 years documented experience in the production of alternators for diesel gen sets. Quality assurance system of the manufacturer shall have valid ISO 9001 certificate.

4.3. Assembly of Generator Set

If the assembly of engine-alternator set is carried out neither by engine manufacturer nor alternator manufacturer, then the assembling party shall be a reputable company with a minimum of 10 years' experience in the assembly of generating sets. The quality assurance system of the assembling company shall have ISO 9001 and/or ISO 9002 certification.

4.4. Local Agent

There shall be an accredited agency in Sri Lanka for the make of generator set offered and also the agent shall have proven record of providing after sales services including maintenance services at least during last five years. The local agent shall have adequate stock of spare parts at all the time, qualified maintenance staff and repair facilities. The local company shall have **ISO 9001** certification and **EM2** or **Upper CIDA** registered up to date to prove the quality management system. As a Local agent at least 100 similar installations or above undertaken within Sri Lanka during the last 5 years.

5. Technical Requirement

5.1. Engine

A four stroke turbo charged with charged air cooler diesel engine complying to B.S. 5514 works on normal auto diesel with sufficient power to take full load of 135kVA at 0.8 power factor and 1500 rpm with 10% overload capacity for 01 hours within a period of every 12 hours is required. The engine shall be directly flange coupled by a semi flexible main drive disc coupling alternator shaft to engine fly wheel to ensure, positive alignment. The engine shall be skid mounted with anti-vibration resilient mountings for the common-skid preferably steel spring isolators. The capacity of the radiator shall be suitable for tropical conditions for maximum ambient temperature of 40 °C. The radiator core shall be fabricated with seamless copper tubes and copper fins, which shall be especially coated with a layer of Tin and Lead to prevent corrosion. The exhaust silencer and the exhaust pipes shall be fully heat insulated with rock wool material and clad with Aluminum sheet having thickness not less than 2.0 mm, which shall be of easily removable and re-fixable type. The exhaust silencer shall be coupled with stainless steel flexible bellows (tubing) to withstand vibration and shall be of critical type.

The engine shall have its own static battery charger to charge battery bank by means of other power source of single phase 230 V, AC when the plant is not in operation. The engine shall be of starter motor operated type (Electric Starting System – 24 V, DC) & complete with heavy duty batteries (12 V, 200 Ah) and a battery charging alternator. The speed of the engine shall be 1500 rpm and the governor shall be of electronic type and be capable of fine governing of speed up to Class G2 of BS ISO 7698-6 permitting plus or minus 1.5% variation on steady-state frequency band.

The following protections shall be provided to shut down the engine.

- Low lubricating oil pressure
- High water temperature
- Over speed
- Low coolant level

5.2. Alternator

The alternator shall be of 400V, AC, 50 Hz, 3 Phase, and 4 wire star connected type and should be directly couple to the engine operating at 1500 rpm. It shall be fully tropicalized and shall possess self-regulating characteristic and brushless type with 3 phase, AC exciter and rotating diodes with surge suppressor. The alternator shall be rated for continuous output of 135 kVA for the respective generators at 0.8 power factor with 10% overload for one hour within a period of every 12 hours

with radio interference suppression to comply with B.S. 800. The insulation of the windings shall be of Class H.

The alternator shall be capable of short time overload for motor starting capability. The alternator and the excitation windings shall be tropicalized and be capable of satisfactory operation at an ambient temperature-and relative humidity without deterioration of insulation of the windings. The generator stator windings shall be wound to 2/3 pitch. The self-exciting and self-regulating characteristic may be obtained from solid state electronic equipment. But such equipment shall be fully tropicalized and certified to be sufficiently aged to prevent correct parameters being altered due to aging, humidity or temperature etc.

The alternator shall be in accordance with B.S. 5000. The star connected neutral point to be brought out to a suitable terminal in the terminal box to earth the generator. The inherent characteristics of the alternator should maintain the output voltage under the condition of load, from no load to 110% full load and at power factor range from unity to 0.8 within the limits of the performance class. The anti-condensation heaters shall be provided to keep the alternator windings warm to maintain the quality and the standard of insulation of windings when the generator is not in operation. Arrangements shall be provided to supply the electrical power from the mains to these heaters.

The following protections shall be provided for alternator, to trip off the main breaker and shut down the engine.

- Over current protection.
- Earth fault protection.
- Over voltage protection.
- Over frequency protection.
- Under frequency protection.
- Under voltage protection.
- Reverse power protection.

Generator Set (Engine + alternator) shall be statically and dynamically balanced at the factory and capable of operating satisfactorily as specified above for not less than 10,000 hours between major overhauls.

5.3. Generator control panels

A set mounted control panels with synchronizing and load sharing facility shall be provided for the generators. The controls system shall be an integrated microprocessor based generator set control system providing voltage regulation, engine protection, alternator protection, operator interface etc.

A Master Key operated switch shall be supplied and installed in the ATS panel to activate & initiate AMF Operation. Upon activation of this key switch, the generators shall start, synchronize and load automatically.

All the control wiring shall be done through hot dip galvanized conduit and fittings.

Adjustable timer (either hardware or software) should be provided for the Shutdown delay (cool down period). The motorized circuit breakers together with all instrumentation, meters, controls of engine and alternator shall be installed in separate cubicles. There shall be free access available to all internal components and wiring within the cubicle. All internal wiring including control cables shall be marked properly.

The control panel shall be equipped with following equipment, meters, indicators etc. for each Generator.

- Tachometer
- Frequency meter
- Hour run recorder
- Power factor meter
- Volt meter
- Ammeter
- kW meter
- kWh meter
- Lubricating oil pressure gauge
- Lubricating oil temperature gauge
- Water temperature gauge
- Generator on load indication
- Fail to start indication
- Duty selector switch
- Emergency stop button
- Trickle charger complete with ammeter
- Low lubricating oil pressure indication
- High water temperature shut down indication
- Over speed shut down indication
- Over current protection indication
- Earth fault protection indication
- Over voltage protection indication
- Over current protection indication
- Over frequency protection indication
- Reverse power indication
- Generator running indication

5.4.Synchronizing Equipment

N / A

5.5.Automatic Voltage Regulator

A fully sealed automatic voltage regulator shall maintain the steady state voltage deviation within the limits of +/- 2.5%. From no load to full load at any power factor between 0.8 lagging and unity maximum voltage dip shall be less than 20% and maximum voltage rise shall be less than 25%. It shall correct voltage fluctuations rapidly and restore the output voltage to the predetermined level with a minimum amount of hunting.

5.6.Sound Proofing Enclosure

Sound attenuation for the Generator shall be provided for the sound reduction. The sound attenuation design shall include layers of sound absorbing materials for the fresh air intake attenuators and hot air discharge attenuators. A proper exhaust silencer shall be provided so that the noise level will be minimized.

Generator canopy shall be provided with sound absorbing materials for walls, doors, soffit etc. Entering of air to the generator shall be via acoustic intake louvers at the generator end and discharge shall be through acoustic louvers at the engine end through air ducts. The acoustic lining shall be applied to the walls, doors, discharge and inlet louvers and soffit. Noise level of the generator sets shall be not more than 70 dB(A), when running at full load, at outside of the generator 7 m away from the enclosure with doors closed. Noise level outside the generator shall meet the Central Environmental Authority (CEA) requirements as follows.

The above CEA requirements may apply at the boundary of the building premises where the generators are installed.

5.7. Generator Vibration

The engine of generator set shall be provided with proper vibration dampers fitted to the base mountings. Vibration isolators of spring/pad type shall be provided as recommended by the generator set manufacturer. Isolators shall include seismic restraints as per the employer's requirement. Flexible connections shall be provided to all exhaust, water, air, fuel and oil piping that leave the engine to prevent the transmission of vibration and the fracture of the piping due to movement of the set. The choice of connections and their installation is to be such as to give long life under normal operating condition of the set. Vibration shall not be passed to the base tank.

6. Documents

Following details / documents shall be submitted with the bid.

- i. Name and address of manufacturer of complete generator.
- ii. Make & Country of manufacture of Engine & Alternator.
- iii. Originals of manufacturer's technical literature for Engine
- iv. Originals of manufacturer's technical literature for Alternator
- v. Sketch of the Generator Canopy drawing.
- vi. Maintenance Schedule
- vii. Duly filled "schedule of technical data".
- viii. Certificate of compliance to the specifications.
- ix. ISO certificate of the Generator and Local Agent or Manufacturer.
- x. Business Registration Certificate
- xi. VAT Certificate
- xii. CIDA Certificate with EM2 or Upper
- xiii. Evidence for qualifications of Engineers/ Technical Staff. At least 5 Engineer with Bsc. Electrical Engineering with 05 years experiences and at least 02 Technician with NVQ Level 04 with 05 years experiences.
- xiv. At least 100 List of Project (Same Generator and Engine you are going to offer for this project) to supply and Installation, Manufacture experience of 135 kVA or above generators.

7. Training

One Maintenance Engineer and one Mechanics nominated by the Employer are to be trained on operation and maintenance of the Generators. Training shall include theoretical aspect and practical training on maintenance schedules, trouble shooting and their remedies.

8. Tests

8.1. Factory Acceptance Test (FAT)

Manufacturer shall furnish load banks, testing instruments and all other equipment as necessary to perform these tests to be witnessed by representatives of the Engineer and Employer.

- Load Test: During this test record the following data at 15-minute intervals.

Time	Engine RPM	Oil Temperature Out
kW	Water Temperature In	Fuel Pressure
Voltage	Water Temperature Out	Oil Pressure
Amperes	Oil Temperature In	Ambient Temperature

- Quick Start Test: Record time required for the engine generator set to develop specified voltage, frequency and kW load from a standstill condition.
- Performance Tests on the assembled diesel generating set (with voltage regulator)
 - i. Check of fuel consumption at different loads
 - ii. Dielectric or insulation tests

8.2. Site Test

The following tests shall be carried out after installation at the Site:

- i. Operational tests {including instantaneous loading (shock load) and load rejection}. 70% shock load shall be tested for each generators individually.
- ii. Measurement of the output
- iii. Functional testing of all alarm and control devices
- iv. Checking of the starting time and of the time up to taking-over full load.
- v. Testing of noise levels. Measurement of sound level at 1m distances.
- vi. Load testing & commissioning with resistive load bank for 1 hour (Each Generator) at 50%, 75%, 100% & 110% of the rated capacity.

Technical Specification

Bid Requirement		Conformity		Bidder's response if no only
		Yes	No	
General Documents				
The following documents shall be submitted with the Bid.				
1	Name & Address of Manufacturer /Assembler			
2	Manufacturer's Authorization Letter in English			
3	Manufacture ISO 9001 Certificate			
4	At least 100 List of Project (Same Generator brand and Engine you are going to offer for this project) to supply and Installation of 135kVA or above generators.			
5	Generator brand and Engine brand should be in operation in Sri Lanka for more than 05 years.			
6	At least 10 numbers or above number of generators supplied for Government Projects on the same or above 135 kVA capacity.			
7	Local Agent's ISO 9001 Certificate			
8	Local Agent's EM2 or Upper CIDA Certificate (Should be up to date)			
9	Originals of manufacturer's technical literature of Generator, Engine and Alternator			
10	Sketch of the Generator Canopy drawing.			
11	Certificate of compliance to the specifications.			
12	Workshop Facilities			
13	Professional and Technical Staff Details			
14	Business Registration Certificate			
15	VAT Certificate			
16	CIDA Certificate			
17	Maintenance Schedule			
18	Engineers and Technical Staff Details			
Generator Set				
1	Brand			
2	Model (Please Specify)			
3	Country of Origin (Should be Europe/USA)			
4	Country of Manufacturer (Should be Europe/USA)			
5	Name & Address of Manufacturer			
6	Prime Rated Output in kVA			

7	Max Output in kW			
8	Rated Current (Should not be less than 190A)			
9	Test Report (Full Load Test)			
10	Certificates of CE and FCC (Availability Yes/No)			
11	Operating Conditions (0°C to 60°C)			
12	Power Factor - 0.8			
13	Speed - 1500 rpm or below			
14	Frequency - 50 Hz			
15	Shock Load acceptance should not be less than 88%			
16	Gross weight of the generator set in Ton			
17	Fuel Tank Capacity (Should not less than 370 liters)			
18	Sound level of the canopy at 7m (Should not exceed 70 dBA)			
19	Availability (Ex-stock and Delivery Period)			
20	Dimension (Length x Width x Height)			
Engine				
1	Make			
2	Model (Please Specify)			
3	Country of Origin (Should be Europe/USA)			
4	Country of Manufacture (Should be Europe/USA)			
5	Name & Address of Manufacturer			
6	Gross engine power kW			
7		i. Prime		
		ii. Standby		
8	Fuel Consumption at			
9		i. 100% Load		
		ii.75% Load		
10	Rated speed (1500 RPM or Below)			
11	Aspiration			
12	Type of Governor should be mechanical			
13	Governor Class (Class A1)			
14	Frequency Regulation, Steady State (ISO 8528 G1 Availability, Yes/No)			
15	Type of Cooling (Water Cooling)			
16	Air Cleaner Type (Dry)			
17	Type of Fuel Used			
18	Fuel Prime Pump (Mechanical)			
19	Starter Motor Rated Voltage (12 V DC)			
20	Battery Charger Capacity (12 V, 5 A)			
21	Battery Type (Lead Acid)			
22	Type of Lubrication System (Forced Lubrication)			
23	Engine Oil Pan Capacity (Should not less than 12 liter)			

24	Type of Silencer (Standard Industrial Type)				
25	Engine Emission (Availability of ISO 8178-5)				
26	Type of Protection:		Availability (Yes/No)		
		i. Low lubricating oil pressure			
		ii.High water temperature			
		iii.Over Speed			
		iv.Low coolant level			
Alternator					
1	Make				
2	Model				
3	Country of Origin (Should be Europe/USA)				
4	Country of Manufacturer (Should be Europe/USA)				
5	Name & Address of Manufacturer				
6	Output in kVA in 0.8 power factor				
7	Excitation Method (Self Excited and Brushless)				
8	Class of Insulation				
9	Pitch of the Stator Windings				
10	Type of Anti-Condensation Heaters				
11	Voltage Regulation				
12	Bearing (Should be Sealed)				
13	Type of protections		Availability (Yes/No)		
		Earth Fault			
		Over Current			
		Over Voltage			
Gen-set Control Panel					
1	Make				
2	Model				
3	Country of Origin (Should be Europe/USA)				
4	Country of Manufacturer (Should be Europe/USA)				
5	Name & Address of Manufacturer				
6	Type of protection and controlling system (Microprocessor based or Relay type)				

7	Availability of meters and indicators	Availability (Yes/No)		
	i. Run Time Hours			
	ii. Frequency			
	iii. Battery Voltage			
	iv. Engine Speed			
	v. Voltage			
	vi. Current			
	vii. Low Lub Oil Pressure			
	viii. Engine temperature			
	ix. Generator on load indication			
	x. Fuel Level			
	xi. Duty selector Function			
	xii. Emergency stop button			
	xiii. Trickle charger complete with ammeter			
	xiv. Lube oil pressure shut down indication			
	xv. High water temperature shut down indication			
	xvi. Over speed shut down indication			
	xvii. Over current protection indication			
	xviii. Over voltage protection indication			
ATS panel				
1	Name of Manufacturer			
2	Country of Origin			
3	Rated Current			
4	No. of Poles			
5	Switchgears Manufacturer (Contactor - ABB/Schneider, Timers and PFR - Anly)			
Other Requirements				
1	Start / Stop Method (Push Button / Key)			
2	Lockable Doors with Key			
3	Emergency Stop Button			
4	Thermally Insulated Engine Exhaust System			
5	Dimension of the canopy			

Power Cables				
1	Manufacturer			
2	Cable Size			
Service and maintenance capability				
1	What is the nearest service center / Workshop located in Sri Lanka for any breakdown attend?			
	i). Name of Technician			
	ii). NIC Number			
	iii). Service Center Address			
	iv). Experiences of Technician should be More than 5 years experiences			
	v). Qualification of Electrical Technician Should be NVQ 3 or above.			
	v). Distance between site and service center			
2	What is the maximum time will take for any breakdown attend?			
3	1 st Year Service Free – 1 Nos per year			
	Warranty (Specify)			

Indicate the VAT Number-

We certify that above information given is true and correct.

Signature:

Company Seal:

Date:

Name:

T.P No:

Bill of Quantity

SUPPLY, INSTALLATION, TESTING, COMMISSIONING AND MAINTENANCE OF 01 NO. OF BRAND NEW 135 kVA THREE PHASE SOUNDPROOF & CANOPY TYPE (AMF SILENT TYPE) DIESEL POWER GENERATOR FOR UNIVERSITY OF VAVUNIYA					
PRICE SCHEDULE					
No.	Description	Unit	Qty	Rate	Amount
A	PRELIMINARY				
1.0	A list of typical general items are given below. However, the bidder is requested to price only those items that may affect this contract.	Note			
2.0	Any other preliminary items not listed below but deemed necessary for the successful execution of the project shall be included in the tender rates, as no claims for extra payments for such, would be entertained.	Note			
3.0	The Generator Contractor shall be responsible for any loss or damage to the works, existing structures, adjoining or adjacent structures and unfixed materials, caused by Generator Contractor during the term of the Contract.	Note			
4.0	Mechanical plant and equipment which emits excessive noise, water, smoke, fumes, or obnoxious liquids, gases etc., will not be allowed to be used on the Site. If the use of such machinery becomes necessary, the Generator Contractor is expected to obtain prior approval from the Engineer	Note			
5.0	The Engineer has the discretion as to when he deems it necessary for the Generator Contractor to take precautions, maintain or repair any such plant and equipment or order their removal from the site.	Note			
6.0	Adequate provisions to be allowed to reduce the amount of vibration, dust, pollution and noise from the Site and the Generator Contractor shall be responsible for any complaints, damages, or claims in connection with the Works. The Generator Contractor shall ensure that the noise and vibration levels are acceptable to the environmental and other authorities and shall maintain a monitoring procedure acceptable to the Engineer including necessary changes to the method of working	Note			
7.0	Site shall be maintained in a clean and orderly manner during the Works. All dust, debris etc. arising out of the Works shall be continuously cleared and removed from the Site. Burying of rubbish and debris on site will not be allowed. Generator Contractor shall be cooperate with the	Note			

	Main Contractor to maintain the Site in clean and tidy manner				
8.0	The Generator Contractor shall maintain the quality and standards during construction including supplying specimen and samples of materials for approval and for testing without any additional cost. All approved materials/ equipment samples shall be retained on site under lock and key and to be protected as necessary	Note			
9.0	The Generator Contractor shall prepare and submit a detailed program of work in the form of a bar schedule showing critical path within 10 days of the date of Letter of Acceptance and shall include all activities. The activities shall include the delivery, construction, installation, testing and commissioning of components and all items associated with setting up on site	Note			
10.0	Provide and maintain performance bond to value equal to 5% of contract price from a bank acceptable to the as specified in the Contract Data in the specimen format attached to the bidding document	Item	1.0		
11.0	Provide an unconditional on demand Mobilization Advance Bond to the value equal to 20% of contract price any commercial bank accepted by the Central Bank. The actual cost for obtaining bonds and guarantees will be reimbursed to the contractor on submission of documentary proof subject to the maximum quoted for this item as specified in the Contract Data in the specimen format attached to the bidding document	Item	1.0		
12.0	Allow for contractor's workmen's compensation insurance cover (workmen compensation insurance cover to be provided for all permanent, temporary and sub contractor's workers.	Item	1.0		
	Sub Total carried to Main Summary			RS.	

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**Signature of the Bidder
and Company Seal**

.....
Date

SUPPLY, INSTALLATION, TESTING, COMMISSIONING AND MAINTENANCE OF 01 NO. OF BRAND NEW 135 kVA THREE PHASE SOUNDPROOF & CANOPY TYPE (AMF SILENT TYPE) POWER GENERATOR FOR [COMPANY NAME]

No.	Description	Unit	Qty	Rate	Amount
B	SUPPLY AND INSTALLATION OF GENERATOR SET				
	The bidders are requested to refer Bill of Quantities pricing Preambles, General Notes, Conditions of Contract, Special Conditions of Contract, Drawings and Specification and other relevant documents related to this bid prior to pricing of the following items.	Note			
	Rate shall include for design (where necessary), supply, install, commissioning of emergency power supply system as per specifications and complete to working order with all connections to the entire satisfaction of the Engineer/ Consultant including training of Employer's staff.	Note			
	The bidder shall provide a schedule of all builder's work in connection with details of such items as necessary, along with the bid.	Note			
	Rates for materials/ plants/ equipment not approved for duty free facilities to be quoted on duty paid basis.	Note			
	The bidder shall provide all dimensions and technical information of all necessary builder's work to the Engineer in advance, in relation with the program of work.	Note			
	All equipment shall be guaranteed for a period of 12 months from the date of commissioning or date of practical completion of the project or handing over of the project which ever later.	Note			
	The rate shall include for insurance during handling, re-handling, transport, and storage until ready for installation, delivery of equipment up to the point of installation and until handing over.	Note			
	The rates shall include for comprehensive maintenance during defects liability period of 12 months from the date of handing over.	Note			

	Emergency Power System shall include all necessary conduiting, trucking, cabling, earthing (separate earth with earth resistance below 10 ohms and bonded to common earth system), erecting trunkings, installing any other related material/equipment, local approvals required for system completion & operation	Note			
	<u>DIESEL GENERATOR SET</u>				
	The Generator neutral & frame shall be connected to the main earthing system	Note			
1.0	135 kVA Generator				
	135 kVA Generators 50 Hz, 1500 RPM, Three Phase, 400V with set mounted fully featured advanced digital control panel. Also offer should include all necessary accessories such as residential muffler with elbow kit, Stainless Steel flexible connector, insulated exhaust piping, Battery cables, Battery Tray, Static battery charger etc to complete the system in working order as per the specifications and relevant standards.	Nos	1.0		
2.0	ATS panel				
	Supply, Installation, Testing and Commissioning of 400A ATS panel as per the Specifications and relevant standards.	Item	1.0		
3.0	Power cables				
	Supply, laying and termination of the Power cables (1X 4C X 120 mm ² Cu / XLPE / SWA/ PVC) from generator to ATS panel through the cable tray (Strictly measure and pay).	m	1.0		
4.0	Control Wiring charges	Item	1.0		
5.0	Additional Exhaust pipes				
	Supply and installation of additional exhaust pipes (if required), made of mild steel, 1ft away from the outside of the generator room.	Item	1.0		
6.0	Earthing System:				
	Neutral point and body of the generator and ATS panel shall be solidly earthed as per the Specifications and relevant standards.	Item	1.0		

7.0	Testing & Commissioning				
	Testing and commissioning of the 1No. 135 kVA Generator set including labor & transport. The base fuel tanks should be filled with Auto Diesel by contactor to testing and commissioning works of the generator and submission of commissioning report in triplicate	Item	1.0		
	Sub Total carried to Main Summary			RS.	

.....
**Signature of the Bidder
and Company Seal**

.....
Date

SUPPLY, INSTALLATION, TESTING, COMMISSIONING AND MAINTENANCE OF 01 NO. OF BRAND NEW 135 kVA THREE PHASE SOUNDPROOF & CANOPY TYPE (AMF SILENT TYPE) DIESEL POWER GENERATOR SETS FOR [COMPANY]

PRICE SCHEDULE

No.	Description	Unit	Qty	Rate	Amount
C	MAINTENANCE CHARGE				
	Sample Service contract Agreement should be submitted with the tender.				
1.0	1st year free maintenance period				
	Including 2 maintenance and any Breakdown attend for one year.	Item	1.0	Free	
2.0	2nd year				
	The rates shall include for comprehensive maintenance (Including 2 maintenance) and any Breakdown attend for one year.	Item	1.0		
3.0	3rd year				
	The rates shall include for comprehensive maintenance (Including 2 maintenance) and any Breakdown attend for one year.	Item	1.0		
4.0	4th year				
	The rates shall include for comprehensive maintenance (Including 2 maintenance) and any Breakdown attend for one year.	Item	1.0		
5.0	5th year				
	The rates shall include for comprehensive maintenance (Including 2 maintenance) and any Breakdown attend for one year.	Item	1.0		
	Sub Total carried to Main Summary			RS.	

.....
**Signature of the Bidder
and Company Seal**

.....
Date

SUMMARY

SUPPLY, INSTALLATION, TESTING, COMMISSIONING AND MAINTENANCE OF 01 NO. OF BRAND NEW 135 kVA THREE PHASE SOUNDPROOF & CANOPY TYPE (AMF SILENT TYPE) DIESEL POWER GENERATOR SETS FOR UNIVERSITY OF VAVUNIYA

..... (Tender Number)

Item	Description	Amount (Rs)
A	Preliminary	
B	Supply and installation of generator set	
	Sub Total 1	
	Less: Discount if any (from Subtotal 1)	
	Sub Total 2	
	Total Carried to Form of Bid	
C	MAINTENANCE CHARGE	
	Sub Total with Maintenance	
	Add 18 % VAT amount	
	Grand Total with VAT	

GRAND TOTAL IN WORDS:

VAT Amount in words:

VAT Registration No:

.....
**Signature of the Bidder
 and Company Seal**

.....
Date

Preventive Maintenance Agreement

Bidder shall mention the prices for comprehensive (Labour, Transport and Consumables) maintenance agreement per year and no of scheduled inspection and routine service carried out per year.

Year	Prices for Comprehensive Maintenance Agreement	No. of Scheduled Inspection	No. of Routine Service
1 st Year	Free of Charge	01	01
2 nd Year			
3 rd Year			
4 th Year			
5 th Year			

Note:-

.....
**Signature of the Bidder
and Company Seal**

.....
Date

Site Visit Confirmation Form

SUPPLYING AND INSTALLATION OF A BRAND NEW DIESEL POWERED 135KVA GENERATOR

Name of the Bidder :

Address of the Bidder :
.....
.....

Date and Time of Site Visit :

.....
**Signature of the Bidder
and Company Seal**

.....
Date

Bill of Quantities/ Schedule of Rates

135kVA Diesel Generator

Item No	Description	Unit	Qty.	Amount Excluding VAT	Amount Including VAT
1	Supply & Delivery of 135KVA Diesel Generator to the Specified location	Item	01		
2	Installation of Generator complete with control panel, Inter connecting cables, Exhaust pipes, Inter connecting earthing, Control cabling and other accessories as per specification & drawings.	Sum			
3	Supply and Installation of Auto Transfer switch matching the Generator capacity quoted	Sum			
4	Supply and Installation of manual changeover matching the Generator capacity quoted.	Sum			
5	Testing & Commissioning and Training of owner's staff assigned for generator operation at the site	Sum			
	Others if any				
6	Surge Protection Device	Sum			
	Sub Total				
	Discount if any(.....)				
	Sub Total after Discount				
	VAT				
	Total				

Bidders VAT No..... (If any)

Bid Amount with out VAT (in words) Rupees

.....

Bidders Signature:

Bidders Seal

Date:.....